Algebra 2 TEST 2.1 Review

I. Find the values of  and  that minimize or maximize the objective functions for each feasible region. Also find the value of the maximum or minimum.

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| 1. Identify the vertices, then **maximize**    Vertices:      Max is \_\_\_\_\_\_  At | 2. Identify the vertices, then **minimize**    Vertices:      Min is \_\_\_\_\_\_  At |

Graph each system of restrictions.

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| 3. | 4. |
| 5. Watch the scales on each axis! 7List the restrictions for the following graph. | |
| 6. A gold processor has two sources of gold ore, source A and source B. In order to keep his plant running, at least three tons of ore must be processed each day. Ore from source A costs $20 per ton to process, and ore from source B costs $10 per ton to process. Costs must be kept to less than $80 per day. Moreover, Federal Regulations require that the amount of ore from source B cannot exceed twice the amount of ore from source A. If ore from source A yields 2 oz. of gold per ton, and ore from source B yields 3 oz. of gold per ton, how many tons of ore from both sources must be processed each day to maximize the amount of gold extracted subject to the above constraints? | |

State the dimensions and identify the indicated element of each matrix.

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| 7. ; | 8. ; | | 9. ; |
| 10. Use the equivalent matrices to solve for each variables. | | 11. a) Rewrite the data from the table in a matrix where the years are the rows and the categories are the columns.   |  |  |  | | --- | --- | --- | | **Unemployment Rates** | | | |  | June 1992 | June 1996 | | Construction | 17.6% | 9.5% | | Manufacturing | 8.3% | 5.1% | | Transportation | 5.4% | 4.5% | | Sales | 8.7% | 6.4% | | Finance | 4.0% | 2.6% | | Services | 6.6% | 5.1% | | Government | 3.5% | 2.7% |   (b) Identify  and what it represents.  (c) Identify  and what it represents. | |

Solve each matrix..

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| 12. | 13. |

Use the provided matrices to find the following, if possible. You may use your graphing calculator.

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| 14. | 15. | 16. | 17. | 18. |
| 19. | 20. | 21. | 22. B - C | 23. 2A - C |

Use a calculator to find the inverse of each matrix, if it exists.

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| 24. | 25. |

Solve for matrix .

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| 26. | | 27. | |
| 28. Write as a matrix equation. Then solve by inverse matrices. | | 29. Write as a matrix equation. Then solve by inverse matrices. | |
| 30. Write a system of equations, then write a matrix equation to solve.  On Monday, Mr. Graff bought 8 packs of yellow chalk and 4 packs of white chalk for $7.40. On Tuesday, Mrs. Graff went to the same store and bought 6 packs of yellow and 12 packs of white chalk for $10.50. How much does each type of chalk cost? | | 31.  Jenny has 10 fewer quarters than dimes and five fewer nickels than quarters. The total value of the coins is $4.75. Write a system of 3 equations and solve for the number of nickels, dimes, and quarters Jenny has in her possession. | |
| 32. Solve the system of 3 equations by hand ☺ | | 33. Solve the system of 3 equations by hand ☺ | |